U.S. Department of the Interior

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Scientific Investigations Map 3022 Pamphlet accompanies map

Barguzin-Vitim granitoid belt (Late Carboniferous)

chs Chosun sedimentary basin (Cambrian and Ordovician)

Dzugdzur anorthositic belt (Paleoproterozoic)

Daebu granite belt (Jurassic)

dms Damaoqi sedimentary basin (Cenozoic)

Eurasia oceanic basin (Cenozoic)

East Jlin plutonic belt (Silurian)

Fenhe sedimentary basin (Cenozoic)

through Middle Cambrian)

Kharinsk granitic assemblage (Triassic)

Jihei volcanic and plutonic belt (Mesozoic)

Japan Neogene sedimentary basin (Neogene)

Japan Quaternary sedimentary basin (Quaternary)

Khanka-Bureya granitic belt (Ordovician and Silurian)

Khmelev back-arc basin (Devonian and Carboniferous)

Khingan-Okhotsk volcanic-plutonic belt (Cretaceous)

Kolyvan-Tom back-arc basin (Devonian to Permian)

Kuznetsk orogenic basin (Devonian to Early Triassic)

Khungari-Tatibi granitic belt (Middle Cretaceous)

Kyongsang sedimentary basin (Early Cretaceous)

Lugyngol volcanic-sedimentary basin (Permian)

North China sedimentary basin (Cenozoic)

North Tarimu plutonic belt (Permian)

Cretaceous, and Paleocene)

through Holocene)

Late Triassic)

Popigay astroblem (Late Eocene)

Nohi rhyolite volcanic belt (Cretaceous)

Laiyang volcanic -sedimentary basin (Cretaceous)

Moma rift sedimentary basin (Miocene and Pliocene)

Kara granitic belt (Late Carboniferous and Early Permian)

Khemchik-Sistigkhem basin (Middle Cambrian through Silurian)

Laptev Sea continental slope (Late Cretaceous through Oligocene)

Minusa molasse basin (Middle Devonian through Early Permian)

Lower Borzja fore-arc basin (Early Carboniferous through Early Triassic)

Lenivaya-Chelyuskin sedimentary basin (Vendian through Carboniferous)

Mana sedimentary basin (Late Neoproterozoic through Middle Cambrian)

Mongol-Transbaikal volcanic-plutonic belt (Late Triassic through Early

North marginal plutonic belt of North China Platform (Carboniferous and

North-Sakhalin sedimentary basin (Oligocene through Quaternary)

Okhotsk-Chukotka volcanic-plutonic belt (late Early Cretaceous, Late

Post-amalgamation assemblages of the Kolyma-Omolon superterrane-

Primorsk lowland and Laptev sea shelf sedimentary basin (Pliocene

UyandinaYasachnaya volcanic belt and IlinTas back arc basin (Late

South Altai back-arc basin (Middle Devonian through Early Carboniferous)

Selenga sedimentary-volcanic plutonic belt (Permian through Jurassic)

Sanjiang sedimentary basin and Yishu graben (Mesozoic and Cenozoic)

Sino-Korea platform sedimentary cover (Proterozoic through Triassic)

Sedimentary basin of Laptev Sea shelf (Early Cretaceous through Ceno-

East Shandong-East Liaoning-East Jilin rift basin (Paleoproterozoic)

South Mongolian volcanic-plutonic belt (Middle Carboniferous through

Sinegorsk volcanic-plutonic assemblage (Devonian and Mississippian)

Okhota sedimentary basin (Late Eocene through Miocene)

Offshore sedimentary assemblages (Mainly Cenozoic)

Sayan collisional granitic belt (Paleoproteroterozoic?)

Shangganhe sedimentary basin (Cenozoic)

South Sakhalin sedimentary basin (Cenozoic)

Shikoku back arc basin (Neogene and Quaternary)

Songliao sedimentary basin (Jurassic through Cenozoic)

South Siberian volcanic-plutonic belt (Early Devonian)

Tatarka-Ayakhta collisional granitic belt (Neoproterozoic)

Tes volcanic-plutonic belt (Devonian through Late Triassic?)

Telmen plutonic belt (Middle Cambrian through Early Ordovician)

Torom sedimentary basin (Late Triassic through Early Cretaceous)

Tungus plateau basalt, sills, dikes, and intrusions—Plutonic rich part

Trans-Baikalian-Daxinganling sedimentary-volcanic-plutonic belt (Middle

Stanovoy granite belt (Jurassic and Early Cretaceous)

Tannuola plutonic belt (Cambrian and Ordovician)

Taraka collisional granitic belt (Paleoproterozoic)

Jurassic through Early Cretaceous)

Tyrma-Burensk granitic assemblage (Permian)

Tamirgol sedimentary basin (Permian)

Tas-Kystabyt magmatic belt (Jurassic)

Pacific Ocean basin (Cretaceous through Cenozoic)

Northern, Eastern, and Western Siberia sedimentary basins (Mesozoic and

Hutuo rift basin (Paleoproterozoic)

Japan basin (Neogene-Quaternary)

Japan volcanic belt (Quaternary)

Liaodong plutonic belt (Triassic)

Cretaceous)

Kodar granitic belt (Paleoproterozoic)

Jihei plutonic belt (Permian)

Cretaceous)

CUK Udokan basin of Chara-Uchur rift system (Paleoproterozoic)

Beitianshan-Waizunger sedimentary basin (Carboniferous through

Central Asian plateau basalt belt (Neogene and Quaternary)

dxs Daxingaling sedimentary overlap assemblage (Carboniferous through

Erlian sedimentary basin (Late Jurassic through Quaternary)

East Tuva back-arc basin (Late Neoproterozoic and Cambrian)

Gobi-Khankaisk-Daxinganling volcanic-plutonic belt (Permian)

Hangay plutonic belt (Late Carboniferous and Early Permian)

Hiroshima granitic plutonic belt (Cretaceous and Paleogene)

Hexizoulang sedimentary basin (Jurassic through Cenozoic)

Izu-Bonin volcanic belt (Miocene through Quaternary)

Hailar-Tamsag sedimentary basin (Late Jurassic and Cretaceous)

Hasan-Amurian volcanic-plutonic belt (Paleocene to Early Miocene)

Huvsgol-Bokson sedimentary overlap assemblage (Late Neoproterozoic

Jilin-Liaoning-East Shandong volcanic-plutonic belt (Late Jurassic and

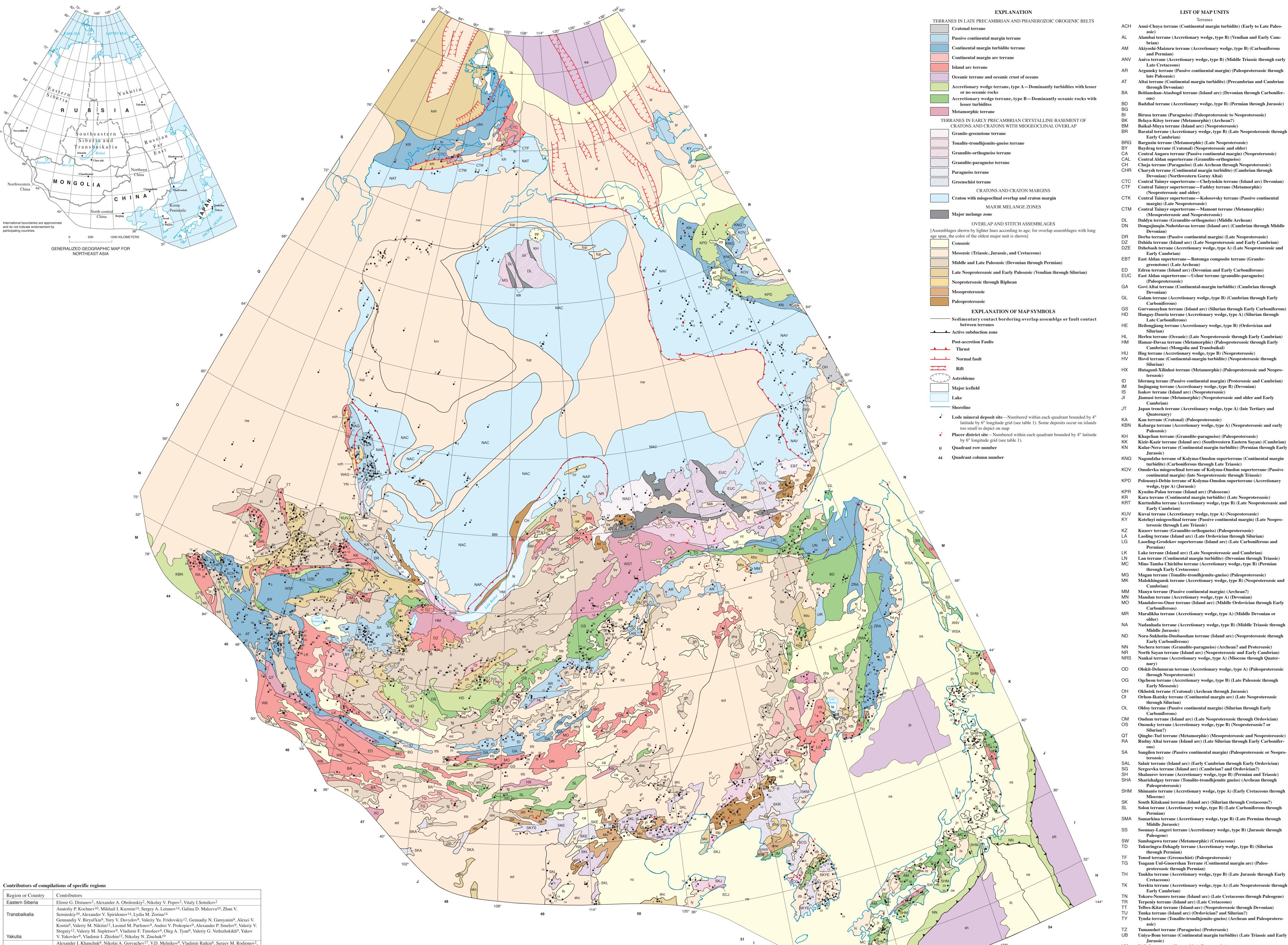
Kalba-Narym plutonic belt (Late Carboniferous through Early Triassic)

Great Lakes sedimentary basin (Jurassic and Cretaceous)

East Sikhote-Alin volcanic-plutonic belt (Late Cretaceous through Miocene)

Gazimur sedimentary basin (Late Neoproterozoic through Early Ordovi-

Erduosi sedimentary basin (Triassic through Cretaceous)



Prepared in collaboration with

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Geological Survey of Japan/National Institute of Advanced Industrial Science and Technology

ACH Anui-Chuya terrane (Continental margin turbidite) (Early to Late Paleo-Alambai terrane (Accretionary wedge, type B) (Vendian and Early Cam-Akiyoshi-Maizuru terrane (Accretionary wedge, type B) (Carboniferous and Permian) ANV Aniva terrane (Accretionary wedge, type B) (Middle Triassic through early Late Cretaceous) Argunsky terrane (Passive continental margin) (Paleoproterozoic through late Paleozoic) Altai terrane (Continental margin turbidite) (Precambrian and Cambrian through Devonian) Beitianshan-Atasbogd terrane (Island arc) (Devonian through Carbonifer-Badzhal terrane (Accretionary wedge, type B) (Permian through Jurassic) Birusa terrane (Paragneiss) (Paleoproterozoic to Neoproterozoic) Belaya-Kitoy terrane (Metamorphic) (Archean?) Baikal-Muya terrane (Island arc) (Neoproterozoic) BR Baratal terrane (Accretionary wedge, type B) (Late Neoproterozoic through Early Cambrian) BRG Barguzin terrane (Metamorphic) (Late Neoproterozoic) Baydrag terrane (Cratonal) (Neoproterozoic and older) CA Central Angara terrane (Passive continental margin) (Neoproterozoic) CAL Central Aldan superterrane (Granulite-orthogneiss) CH Chuja terrane (Paragneiss) (Late Archean through Neoproterozoic) CHR Charysh terrane (Continental margin turbidite) (Cambrian through Devonian) (Northwestern Gorny Altai) (Neoproterozoic and older) margin) (Late Neoproterozoic) Early Cambrian) greenstone) (Late Archean) (Paleoproterozoic) Carboniferous) Late Carboniferous) Isakov terrane (Island arc) (Neoproterozoic) KA Kan terrane (Cratonal) (Paleoproterozoic) wedge, type A) (Jurassic) KPR Kyushu-Palau terrane (Island arc) (Paleocene) Early Cambrian) terozoic through Late Triassic) LN Lan terrane (Continental margin turbidite) (Devonian through Triassic) MC Mino Tamba Chichibu terrane (Accretionary wedge, type B) (Permian through Early Cretaceous) Magan terrane (Tonalite-trondhjemite-gneiss) (Paleoproterozoic) MK Malokhingansk terrane (Accretionary wedge, type B) (Neoproterozoic and

Carboniferous)

Middle Jurassic)

Early Carboniferous)

through Neoproterozoic)

Early Mesozoic)

through Silurian)

Carboniferous)

Paleoproterozoic)

Middle Jurassic)

Early Cambrian)

Nadanhada terrane (Accretionary wedge, type B) (Middle Triassic through

Nechera terrane (Granulite-paragneiss) (Archean? and Proterozoic)

Orhon-Ikatsky terrane (Continental margin arc) (Late Neoproterozoic

Ondum terrane (Island arc) (Late Neoproterozoic through Ordovician)

Qinghe-Tsel terrane (Metamorphic) (Mesoproterozoic and Neoproterozoic)

Rudny Altai terrane (Island arc) (Late Silurian through Early Carbonifer-

Salair terrane (Island arc) (Early Cambrian through Early Ordovician)

Shalaurov terrane (Accretionary wedge, type B) (Permian and Triassic)

South Kitakami terrane (Island arc) (Silurian through Cretaceous?)

Solon terrane (Accretionary wedge, type B) (Late Carboniferous through

Sosunay-Langeri terrane (Accretionary wedge, type B) (Jurassic through

Tsagaan Uul-Guoershan Terrane (Continental margin arc) (Paleo-

Taukha terrane (Accretionary wedge, type B) (Late Jurassic through Early

Tokoro-Nemuro terrane (Island arc) (Late Cretaceous through Paleogene)

Tynda terrane (Tonalite-trondhjemite-gneiss) (Archean and Paleoprotero-

Telbes-Kitat terrane (Island-arc) (Neoproterozoic through Devonian)

Uimen-Lebed terrane (Island arc) (Cambrian through Ordovician)

UN Ulban terrane (Continental margin turbiditie) (Late Triassic through

UR Urmi terrane (Passive continental margin) (Archean through Middle

VS Voznesenka terrane (Passive continental margin) (Cambrian through

WAG West Angara terrane (Passive continental margin) (Neoproterozoic) WB Waizunger-Baaran terrane (Island arc) (Ordovician through Permian) WD Wundurmiao terrane (Accretionary wedge, type B) (Mesoproterozoic

WSA West Sakhalin terrane (Accretionary wedge, type A) (Cretaceous)

ZA Zavhan terrane (Continental margin arc) (Late Neoproterozoic)

Xichangjing terrane (Metamorphic) (Proterozoic) Yenisey terrane (Paragneiss) (Paleoproterozoic?)

WST West Stanovoy terrane (Metamorphic) (Archean through Mesoproterozoic) WSY West Sayan terrane (Continental margin turbidite) (Late Neoproterozoic

ZN Zhangguangcailing superterrane (Continental margin arc) (Neoproterozoic

ZRA Zhuravlevsk-Amur River terrane (Continental margin turbidite) (Late

Altai volcanic-plutonic belt (Devonian and Early Carboniferous)

Amur-Zeya sedimentary basin (Late Jurassic to Quaternary)

Bureya sedimentary basin (Early Jurassic to Early Cretaceous)

Baikal sedimentary-volcanic rift belt (Oligocene through Quaternary)

Belokurikha plutonic belt (Late Permian through Early Jurassic) (Altai,

Overlap Assemblages Adycha intermountain sedimentary basin (Miocene and Pliocene)

Agul (Rybinsk) molasse basin (Middle Devonian to Early Carboniferous)

Altai-Mongolia intermontane basin (Paleogene, Neogene, and Quaternary)

Zoolen terrane (Accretionary wedge, type B) (Ordovician(?) and Devonian)

Terekta terrane (Accretionary wedge, type A) (Late Neoproterozoic through

Sambagawa terrane (Metamorphic) (Cretaceous)

Tonod terrane (Greenschist) (Paleoproterozoic)

Terpeniy terrane (Island arc) (Late Cretaceous)

Tumanshet terrane (Paragneiss) (Proterozoic)

Urik-Iya terrane (Greenschist) (Proterozoic)

WAD West Aldan terrane (Granite-greenstone) (Archean)

through Middle Ordovician)

through Devonian)

through Devonian)

Mongolia, China)

Jurassic and Early Cretaceous)

Argun sedimentary basin (Early Paleozoic)

Akitkan volcanic-plutonic belt (Paleoproterozoic)

Altai-Sayan back-arc basin (Vendian and Cambrian)

Biya sedimentary basin (Cambrian and Ordovician)

UO Ulugo terrane (Island arc) (Early Cambrian)

Geologic base map is generalized version of Northeast Asia

Geodynamics Map (Parfenov and others, 2003).

Tunka terrane (Island arc) (Ordovician? and Silurian?)

proterozoic through Permian)

Sergeevka terrane (Island arc) (Cambrian? and Ordovician?)

Sangilen terrane (Passive continental margin) (Paleoproterozoic or Neopro-

Oldoy terrane (Passive continental margin) (Silurian through Early

Ononsky terrane (Accretionary wedge, type B) (Neoproterozoic? or

Okhotsk terrane (Cratonal) (Archean through Jurassic)

MM Manyn terrane (Passive continental margin) (Archean?)

CTC Central Taimyr superterrane—Chelyuskin terrane (Island arc) Devonian) CTF Central Taimyr superterrane—Faddey terrane (Metamorphic) CTK Central Taimyr superterrane—Kolosovsky terrane (Passive continental CTM Central Taimyr superterrane—Mamont terrane (Metamorphic) (Mesoproterozoic and Neoproterozoic) Daldyn terrane (Granulite-orthogneiss) (Middle Archean) DN Dongujimqin-Nuhetdavaa terrane (Island arc) (Cambrian through Middle Derba terrane (Passive continental margin) (Late Neoproterozoic) Dzhida terrane (Island arc) (Late Neoproterozoic and Early Cambrian) DZE Dzhebash terrane (Accretionary wedge, type A) (Late Neoproterozoic and EBT East Aldan superterrane—Batomga composite terrane (Granitekni Konino-Nimelen sedimentary basin (Neogene and Quaternary) Edren terrane (Island arc) (Devonian and Early Carboniferous) **EUC** East Aldan superterrane—Uchur terrane (granulite-paragneiss) ksh Kara Sea shelf sedimentary basin (Cambrian thorugh Permian) Govi Altai terrane (Continental-margin turbidite) (Cambrian through Galam terrane (Accretionary wedge, type B) (Cambrian through Early Gurvansayhan terrane (Island arc) (Silurian through Early Carboniferous) HD Hangay-Dauria terrane (Accretionary wedge, type A) (Silurian through HE Heilongjiang terrane (Accretionary wedge, type B) (Ordovician and Herlen terrane (Oceanic) (Late Neoproterozoic through Early Cambrian) HM Hamar-Davaa terrane (Metamorphic) (Paleoproterozoic through Early Cambrian) (Mongolia and Transbaikal) Hug terrane (Accretionary wedge, type B) (Neoproterozoic) HV Hovd terrane (Continental-margin turbidite) (Neoproterozoic through Hutaguul-Xilinhot terrane (Metamorphic) (Paleoproterozoic and Neopro-Idermeg terane (Passive continental margin) (Proterozoic and Cambrian) Imjingang terrane (Accretionary wedge, type B) (Devonian) Jiamusi terrane (Metamorphic) (Neoproterozoic and older and Early Japan trench terrane (Accretionary wedge, type A) (late Tertiary and KBN Kabarga terrane (Accretionary wedge, type A) (Neoproterozoic and early KH Khapchan terrane (Granulite-paragneiss) (Paleoproterozoic) KK Kizir-Kazir terrane (Island arc) (Southwestern Eastern Sayan) (Cambrian) KN Kular-Nera terrane (Continental margin turbidite) (Permian through Early KNG Nagondzha terrane of Kolyma-Omolon superterrane (Continental margin turbidite) (Carboniferous through Late Triassic) KOV Omulevka miogeoclinal terrane of Kolyma-Omolon superterrane (Passive continental margin) (late Neoproterozoic through Triassic) sab South Aldan sedimentary basin (Jurassic) KPD Polousnyi-Debin terrane of Kolyma-Omolon superterrane (Accretionary KR Kara terrane (Continental margin turbidite) (Late Neoproterozoic) KRT Kurtushiba terrane (Accretionary wedge, type B) (Late Neoproterozoic and KUV Kuvai terrane (Accretionary wedge, type A) (Neoproterozoic) KY Kotelnyi miogeoclinal terrane (Passive continental margin) (Late Neopro-Kuzeev terrane (Granulite-orthogneiss) (Paleoproterozoic) Laoling terrane (Island arc) (Late Ordovician through Silurian) LG Laoeling-Grodekov superterrane (Island arc) (Late Carboniferous and LK Lake terrane (Island arc) (Late Neoproterozoic and Cambrian) Snw Sangwon sedimentary basin (Proterozoic)

LIST OF MAP UNITS

(Permian and Triassic) tuv Tungus plateau basalt, sills, dikes, and intrusions—Volcanic—rich part (Permian and Triassic) Tuva molasse basin (Middle Devonian through Late Carboniferous) Ua Upper Angara carbonate sedimentary basin (Late Neoproterozoic through Middle Cambrian) Upper Borzja marine molasse basin (Early Jurassic) ubn Uboynaya granite- syenite belt (Early Triassic) Uda volcanic-plutonic belt (Late Jurassic and Early Cretaceous) Ulkan plutonic belt (Paleoproterozoic) Umlekam-Ogodzhin volcanic-plutonic belt (Cretaceous) Ussuri sedimentary assemblage (Early Cretaceous through Quaternary) Vorogovka-Chapa basin (Late Neoproterozoic through Cambrian?) Vladivostok sedimentary and magmatic assemblage (Permian) Verkhnezeya sedimentary basin (Cenozoic)

Yong-il sedimentary basin (Late Cretaceous)

NAC North Asian Craton (Archean through Mesozoic)

Yanji-Jixi-Raohe sedimentary assemblage (Mesozoic and Cenozoic) Yanliao volcanic-sedimentary basin and plutonic belt (Jurassic through Cretaceous) Zhangbei-Bayan Obo-Langshan metasedimentary and metavolcanic rock unit (Paleoproterozoic and Mesoproterozoic) **Zhangguangcailing plutonic belt (Early Silurian through Late Ordovician)** Zag-Haraa turbidite basin (Middle Cambrian through Early Ordovician) zhs Zhangguangcailing sedimentary overlap assemblage (Paleozoic) Zyryanka sedimentary basin (Late Jurassic through Cenozoic) Cratons and Craton Margins

West Sakhalin sedimentary basin (Paleocene through Quaternary)

NAE North Asian Craton Margin (Angara fold and thrust belt) (Late Neoproterozoic through Cambrian) NAP North Asian Craton Margin Patom-Baikal fold and thrust belt (Passive continental margin) (Mesoproterozoic and Neoproterozoic) NAT North Asian Craton Margin—South-Taimyr fold belt (Passive continental margin) (Ordovician through Triassic) NAV North Asian Craton Margin - Verkhoyansk fold and thrust belt (Passive continental margin) (Carboniferous through Middle Jurassic) SCG South China (Yangzi) Craton—Gyenggi terrane (Granulite-paragneiss)

(Mesoproterozoic and Neoproterozoic and older) SCJ South China (Yangzi) Craton—Jilin-Liaonan Ultra-High Pressure terrane (Metamorphic) (Paleoproterozoic) SKA Sino-Korean Craton—Alashan terrane (Granulite-paragneiss) (Paleoproterozoic) SKE Sino-Korean Craton—Erduosi terrane (Granulite-paragneiss) (Archean) SKJ Sino-Korean Craton—Jilin-Liaoning-East Shandong terrane (Tonalitetrondhjemite-gneiss) (Archean)

SKL Sino-Korean Craton—West Liaoning-Hebei-Shanxi terrane (Granuliteorthogneiss) (Archean) SKM Sino-Korean Craton—Machollyong terrane (Granulite-paragneiss) (Archean to Paleoproterozoic)

SKR Sino-Korean Craton—Rangnim terrane (Granulite-paragneiss) (Archean) SKYE Sino-Korean Craton—Yeongnam terrane (Granulite-paragneiss) (Late SKYS Sino-Korean Craton—Yinshan terrane (Granite-greenstone) (Archean)

Major Melange Zones am Amga tectonic melange zone Billyakh tectonic melange zone Kalar tectonic melange zone

ktk Kotuykan tectonic melange zone Tyrkanda tectonic melange zone

Metallogenic Belt and Mineral Deposit Maps of Northeast Asia Map A—Lode Mineral Deposits and Placer Districts

Central longitude 110° East

Central latitude 60° North

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